MCI Telecommunications Corporation

1801 Pennsylvania Avenue, NW
Washington, DC 20006

DOCKET FILE COPY ORIGINAL

October 3, 1997

Mr. William F. Caton
Secretary
Federal Communications Commission
Room 222
1919 M Street, N.W.
Washington, D.C. 20554

Re: **CC Docket No. 96-45; Federal-State Joint Board on Universal Service**
CC Docket No. 97-160; Forward-Looking Mechanism for High Cost Support for Non-Rural LECs

Dear Mr. Caton:

Enclosed herewith for filing are the original and four (4) copies of AT&T Corp.'s and MCI Telecommunications Corporation's Reply Comments in the above-captioned proceeding.

Please acknowledge receipt by affixing an appropriate notation on the copy of the Comments furnished for such purpose and remit same to the bearer.

Sincerely yours,

Chris Frentrup

Chris Frentrup
Senior Economist
1801 Pennsylvania Ave, NW
Washington, DC 20006
(202) 887-2731

MCI Telecommunications Corporation

Enclosure

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the Matter of	)	
	)	
Federal-State Joint Board on Universal Service	)	CC Docket No. 96-45
	)	
	)	
Forward-Looking Mechanism for High Cost Support for Non-Rural LECs	)	CC Docket No. 97-160
	)	

REPLY COMMENTS OF AT&T CORP. AND MCI TELECOMMUNICATIONS CORPORATION

David L. Lawson
Scott M. Bohannon
1722 I Street N.W.
Washington, D.C. 20006
(202) 736-8034

Mark C. Rosenblum
Peter H. Jacoby
Room 3245111
295 North Maple Avenue
Basking Ridge, New Jersey 07920
(908) 221-2631

Attorneys for A&T Corp.

Chris Frentrup
Senior Economist
1801 Pennsylvania Avenue, N.W.
Washington, D.C. 20006
(202) 887-2731

MCI Telecommunications Corporation

October 3, 1997

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SUMMARY

Any cost model used to set universal service support should be based on forward-looking criteria, rather than on the local exchange carriers' embedded network. The mix of aerial, buried, and underground plant, and the level of structure sharing with other utilities, should reflect the forward-looking opportunities for these factors, not the LECs' historical deployment.

Distribution and feeder plant are correctly modeled in Hatfield. Even though there is no explicit matching of outside plant to the road network, the Hatfield Model does not under-estimate either the amount of plant or the cost of placing that plant. Similarly, the Hatfield model's assumed drop lengths are reasonable. Estimation of drop lengths would require determination of lot shape and size and placement of the house within the lot, which would require either a tremendous amount of site-specific data or would itself require assumptions about these factors. Thus, the Hatfield Model's approach of assuming drop lengths is a reasonable procedure that is sufficiently flexible for all modeling needs.

Finally, the Hatfield Model installs copper T-1 technology to serve distant customers that otherwise would be served by loops containing more than 18 kilofeet of copper. This technology is the most efficient technology to provide a voice-grade network capable of supporting advanced services. The Hatfield Model correctly engineers its network to incorporate this forward-looking technology, and includes all necessary equipment.

Before the
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REPLY COMMENTS OF AT&T CORP. AND MCI TELECOMMUNICATIONS CORPORATION

AT&T Corp. ("AT&T") and MCI Telecommunications Corporation ("MCI") hereby submit their reply comments regarding outside plant issues in the above-captioned docket.

I. INTRODUCTION

In our initial comments concerning outside plant, AT&T and MCI stated that an appropriate cost model should reflect the forward-looking design of the network required to provide the services that will receive universal service support, i.e., a voice grade network that is capable of supporting advanced services. To meet this requirement, an appropriate cost model would use a plant mix that varies by lines density of the area served and by relative cost of the different types of plant in the terrain of the served area. However, the incumbent local exchange carriers' (LECs') existing mix of types of plant is unlikely to reflect these forward-looking criteria, and

should not be used to determine the mix of plant for the cost model. Furthermore, the drop lengths used in the model should be assumed rather than estimated, because this method can assure sufficient accuracy and because precise information about the locations of houses, roads, and empty areas is not available.

The amount of structure sharing used in the model should also reflect forward-looking criteria. The degree of sharing in the incumbent LECs' embedded network reflects merely the sharing decisions made by the LECs when they were faced with the incentives of a monopoly environment. It will substantially understate the forward-looking sharing, given both the increase in incentives to share structures in order to cut costs as competition grows, and the increase in the number of parties with whom to share structure. Finally, the Hatfield Model's use of copper T-1 technology to provision digital quality service to those few distant customers that would otherwise be served by loops containing more than 18 kilofeet of copper is the most economically efficient method of meeting the performance standard that the Commission has adopted for universal service.

In their comments, several parties have questioned these conclusions, or have otherwise claimed that the network as designed in the Hatfield Model is flawed in some manner. We discuss these issues infra.

II. THE MIX OF PLANT IN THE MODEL SHOULD BE BASED ON FORWARD-LOOKING CRITERIA, NOT THE INCUMBENT LOCAL EXCHANGE CARRIERS' EMBEDDED MIX (III.C.2.a. PLANT MIX)

The Hatfield Model allows the user to specify the mix of buried, aerial, and underground plant by density zone. In addition, the Hatfield Model sponsors are

developing a method by which the amount of buried and aerial plant can be varied based on terrain factors, such as hard or soft rock. The mix of aerial and buried plant will be determined by the "life cycle" costs (which includes both the "first-cost" and maintenance costs) of the two types of plant, with the model selecting the type of plant based on their relative cost.

Ameritech claims that there are several factors that affect plant mix beyond terrain and population density. Since the incumbent LECs' embedded plant mix is the response to all these factors, Ameritech argues, the embedded plant mix should be considered the forward-looking mix. AT&T and MCI do not agree. The LECs' embedded mix, because it represents decisions they have made over several years, does not represent the decisions that would be made today by a company that is providing the services that will receive universal service support. The Hatfield Model's approach, whereby the relative cost of placing aerial and buried plant will be the prime determinant of the mix, is preferable to an approach that relies solely on the LEC's historical practices.

III. THE HATFIELD MODEL'S TREE AND BRANCH ROUTING OF DISTRIBUTION AND FEEDER ACCURATELY ESTIMATES THE AMOUNT OF PLANT (III.C.2.b INSTALLATION AND CABLE COSTS)

The Rural Utilities Service (RUS) claims that any cost model must reflect the fact that outside plant is placed along roads.[1] Any placement of plant, especially in rural areas, that goes anywhere but in a public right of way will face higher costs

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[1] See Comments of Rural Utilities Service at 2.

for the purchase of that right of way than are currently reflected in the models, the RUS states.

The Hatfield Model sponsors acknowledge that outside plant will typically be placed along roads. However, roads typically head directly toward population clusters. Furthermore, the current Hatfield algorithm for computed feeder and distribution distances, which assumes that feeder plant leaves the central office at the four cardinal points of the V&H compass, and then branches out in a tree and branch structure to reach individual homes, likely overstates the plant that would be placed if the model explicitly followed the roads. In addition, since the Hatfield Model also uses rectilinear routing of cable from the Serving Area Interface to the home, the distribution network should likewise be overstated.[2]

IV. HATFIELD'S ASSUMED DROP LENGTHS ARE REASONABLE (III.C.2.c DROPS)

Since house, road, and empty area locations are not precisely known, the Hatfield Model uses assumed drop lengths, which vary by density zones.[3] Because neither BCPM nor Hatfield determine accurately the amount of empty area in particular customer locations, or where houses are in relation to the roads, there

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2 Rectilinear routing implies a route-to-air distance multiplier of $4/\pi \approx 1.27$.

3 The two least dense zones have user-adjustable average drop lengths of 150 feet, the next two zones have average drop lengths of 100 feet, and the remaining five zones have average drop lengths of 50 feet.

is no need (or capability) to determine drop lengths other than by averages.[4] Ameritech also states that the use of assumed rather than estimated drop lengths is appropriate.[5]

The BCPM Sponsors claim that Hatfield's assumed drop lengths are too short, specifically claiming that an assumed drop of 150 feet on a 3-acre in town lot is too short.[6] No evidence is offered to support this claim. In fact, a 3-acre (130,680 square foot) lot which is twice as deep as it is wide, as is assumed in the Hatfield Model, would be approximately 256 feet wide by 512 feet deep. Given that houses are usually placed closer to the front of the property, especially in towns as assumed here, a 150 foot drop cable is not too short. Indeed, if the setback from the street were fully one third of the depth of the lot, the house would be only 170 feet from the road. Furthermore, setbacks in towns rarely are so high. Thus, Hatfield's assumed drop lengths are not unreasonably short, as the BCPM sponsors claim.

Similarly GTE claims the Hatfield Model's drop lengths are too short, noting that the 1993 New Hampshire Incremental Cost Study by New England Telephone

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[4] As explained in our comments, in addition to knowing amount of area held "empty" for parks, interstates, etc. in a service area, estimating drop lengths would require specification of the lot size and shape, the location of the house within the lot, the width of the house, the point on the street from which the drop enters the lot, and the point on the house where the drop is terminated.

[5] See Comments of Ameritech at 8.

[6] See Comments of Sprint, BellSouth, and US West at 14.

Company estimated an average drop length of 125 feet in that state, rather than the 87 foot average in the Hatfield Model, and claiming that the Hatfield Model's average drop length is 64 feet, whereas the most recent nationwide study of drop lengths gives an average of 73 feet.[7] The estimate of a 125 foot average drop length cited by GTE is not supported in the cost study; it is simply asserted.[8] In addition, 64 feet is the average drop length in Bell Operating Company (BOC) territories in the Hatfield model. In non-BOC territories, the average is 92 feet, giving a total nationwide average of 70 feet. Thus, the Hatfield Model's average drop length is very close to the nationwide average. In any case, the Hatfield Model's default drop lengths are a user-adjustable input, and their accuracy does not change the fact that estimating drop lengths will require either a great deal more data than is currently in the models, or will itself require assumptions about lot shape and size, and location of the lot on the house. Thus, the "estimated" drop lengths in BCPM are not based on actual drop lengths, but are simply the result of assumptions regarding these factors.

V. STRUCTURE SHARING PERCENTAGES SHOULD REFLECT THE POTENTIAL FOR SHARING, NOT THE LECS' EMBEDDED PRACTICE (III.C.2.d STRUCTURE SHARING)

The Commission tentatively concluded that 100% of buried and 66% of underground and aerial installation costs should be assigned to the telephone

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7 See Comments of GTE at 6.

8 "The typical drop wire is 125 feet in length." New Hampshire Incremental Cost Study, p. 27 (emphasis added).

company. Several parties supported this conclusion, claiming that sharing of plowing is not done,[9] that sharing is less likely to occur in rural areas;[10] or that sharing of buried structure requires utilities to coordinate their placement of plant.[11]

In our previous comments on this issue, AT&T and MCI cited extensive record evidence that in fact there is substantial sharing of all types of plant, including buried.[12] That evidence shows that most telephone companies today are overcoming the purported difficulties of coordinating their placement of buried plant.[13] As we stated in our comments, the sharing percentages adopted in the model should reflect forward-looking opportunities and incentives to share.

The incumbent LECs' current level of sharing represents merely the sharing that occurred when the LECs faced a monopoly environment. As the Florida PSC notes, there should be more sharing of structure in the future.[14] In fact, sharing should rise in all areas, rural as well as urban, both because of the greater incentives to reduce costs and because of the increase in the number of entities

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9 See Comments of Florida PSC at 7.

10 See Comments of Rural Utilities Service at 5-6.

11 See Comments of Sprint, BellSouth, and US West at 15-16; GTE at 8.

12 This evidence included, inter alia, a photograph of a cable plow placing simultaneously two cable sheaths.

13 As the attached article shows, buried structure sharing is practiced by utilities - even if monopoly telephone companies choose not to avail their ratepayers of its potential cost savings. See Attachment A.

14 See Comments of Florida PSC at 8.

with whom to share structure costs.

Moreover, the Telecommunications Act of 1996 explicitly contemplates the sharing of outside plant structures. The Act modified § 224 of the Communications Act to require attachers to pay for two-thirds of the non-usable space on poles, ducts, conduits, and rights-of-way. 47 U.S.C. § 224(e). This requirement, then, implies that Congress believed three parties on average would be using an incumbent LEC's outside plant structures and provides compensation for use of these structures under this assumption. If the selected cost model assumes no cost sharing or even that only two parties share these structures, incumbent LEC's will over-recover the costs of these structures. The efficient level of compensation will arise if an efficient level of structure sharing is built into the selected cost mechanism and the Commission ensures that its cost model requirements are consistent with § 224 of the Communications Act.

VI. THE COMMISSION SHOULD ADOPT A PERFORMANCE RATHER THAN A NETWORK STANDARD (III.C.2.e.(1) & (2) FIBER-COPPER CROSSOVER POINT & LOOP STANDARDS)

In their comments, AT&T and MCI supported the use of a performance standard rather than a network standard, because doing so would allow the cost model to reflect the most economically efficient way of providing a desired level of service. Aliant also supports this approach.[15] However, GTE urges the

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[15] See Aliant Comments at 4.

Commission to adopt the Carrier Serving Area (CSA) network standard.[16] While noting that an 18,000 foot copper loop, as allowed under the Revised Resistance Design (RRD) rules, will support the provision of some advanced services, GTE claims that "at least one commercially available 1.544 mbps high density subscriber line ("HDSL") product constrain[s] copper loops to 12,000 feet of 24-gauge cable or 9000 feet of 26-gauge cable." Because this limitation is similar to the limitation imposed in the CSA standard, GTE argues, CSA should be selected as the network standard.

As a threshold matter, it should be recognized that CSA is a planning "concept", not a standard.[17] Furthermore, GTE is incorrect on two counts. First, while it may be true, as GTE claims, that one commercially available HDSL product has this constraint, HDSL is available for longer loops. Second, the Commission has determined that the network to be reflected in the cost model for universal service support is a network capable of providing voice grade service while allowing provision of advanced services. If the LECs are deploying a network that provides service above that level, then the extra-capability services supported by that more advanced network are the cost-causers of that additional network performance.

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16 See GTE Comments at 11-12.

17 See Bellcore, Telecommunications Transmission Engineering, 1990, p. 94; Bellcore, BOC Notes on the LEC Networks - 1994, p. 12-5, and; AT&T Outside Plant Engineering Handbook, August 1994, p. 13-1. These sources still advocate the use of Rural Allocation Areas where appropriate, rather than CSA.

The Universal Service Fund should not be increased so that the LECs will be able to receive a subsidy to provide additional services, such as video dial tone, which are beyond the level of service intended to be subsidized. As GTE itself acknowledges, an 18,000 foot copper loop will support advanced services. The Commission should not require the network for the cost model to be designed to a specification that exceeds the level needed to provide the services it has decided require universal service support.

Two other parties make claims concerning the design of copper loops that are incorrect. First, the BCPM sponsors claim that, "[g]iven the mix of services provided by telephone companies, 12,000 feet is the electrical limitation of 26 gage [sic] copper".[18] The current mix of services provided by telephone companies is irrelevant to the design of the network for the universal service cost model. The service to be subsidized is voice grade service, provided over a network capable of supporting advanced services. As the BCPM sponsors acknowledge, use of copper at lengths of up to 18,000 feet will be possible, without requiring the use of load coils.[19] Thus, the use of these long copper loops will provide the level of service which the universal service fund is intended to support.

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[18] See Comments of Sprint, BellSouth, and US West at 15-16; GTE at 16 (emphasis added).

[19] Ibid. The Commission determined that the use of load coils would prevent the use of modems. AT&T and MCI have filed evidence, cited in our comments at footnote 35, that loops with load coils will support high-speed modems.

Second, Bell Atlantic claims that underground copper requires splicing every 600 feet, and that therefore the Hatfield Model's default assumption of 2000 feet between pullboxes is excessive.[20] The 2000 foot distance between pullboxes applies only to fiber feeder. For copper feeder, the Hatfield Model 4.0 uses manholes, which are spaced between 400 and 800 feet apart, depending on population density. The maximum length of 4200 pair cable on a standard 420 Type reel is 931 feet. Thus, Bell Atlantic's claim that 600 feet is the maximum distance possible between splices on copper cable is incorrect.

VII. THE HATFIELD MODEL'S COPPER T-1 TECHNOLOGY IS THE MOST EFFICIENT DESIGN FOR A NETWORK THAT PROVIDES THE SERVICES THAT ARE ELIGIBLE FOR UNIVERSAL SERVICE SUPPORT (III.C.2.e(3) DIGITAL LOOP CARRIERS)

The Hatfield Model uses copper T-1 technology to provide digital quality service to distant customers in those rare cases (much less than 1 percent of total loops) in which the copper portion of loops exceeds 18 kilofeet. Some parties claim that this T-1 technology is not the forward-looking method of providing service to these distant customers.[21]

Before deciding to use copper T-1 technology, the Hatfield sponsors examined various alternatives to serve those long loops, including use of fiber-fed Digital Loop Carriers (DLCs), HDSL, and copper T-1s. Based on that analysis,

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20 See Comments of Bell Atlantic at 4-5.

21 See Comments of Sprint, BellSouth, and US West at 17; GTE at 10; Rural Utilities Service at 4.

Hatfield's designers determined that copper T-1 technology was the most economically efficient option for provisioning the services to receive universal service support. Therefore, copper T-1 technology should be used in the cost model regardless of what companies are currently installing, i.e., if companies are installing some other, higher cost technology that is not needed for a network that can provide voice grade service while being capable of supporting advanced services, the universal service fund should not be used to subsidize that market decision by the LECs.

GTE claims that the Hatfield Model's T-1 loop design is technically flawed in two respects: (1) repeaters are placed every 6000 feet, while the maximum allowable distance for 24- and 26-gauge cable is 5000 and 4000 feet, respectively; and; (2) Hatfield's use of up to 12 repeater segments results in a cumulative line span resistance of 11,251 ohms, whereas the maximum line span resistance for T-1 is 8,456 ohms.[22]

These two claims are incorrect. While sources differ slightly on the maximum allowable cable loss at 772 kHz (from 31dB to 35dB), the standard normally used by outside plant engineers is 32dB of loss between repeaters. A 24 gauge buried filled cable has a standard loss of 5.0 dB/kilofoot, and aerial air core cable has a standard loss of 5.8 dB/kilofoot.[23] Since the Hatfield Model defaults to

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22 See Comments of GTE at 10.

23 AT&T Outside Plant Engineering Handbook, August 1994, p. 5-14

75% buried and 25% aerial in the three lowest density zones where this situation will be encountered, an average repeater spacing of 6,000 ft. is appropriate (32dB/{.75 x 5.0 + .25 x 5.8}= 6,154 feet).

GTE's statement that the maximum T-1 "line span" resistance is 11,251 ohms is nonsensical. The maximum T-1 distance in the Hatfield Model is 12 18,000 foot segments, or 216,000 feet. Using 24-gauge wire pairs, the total cable resistance is about 5,545 ohms, not 11,251 ohms as GTE claims. The Hatfield Model sponsors can only assume that GTE is attempting to refer to resistance as it pertains to line powering of the repeaters. What GTE has failed to note is the fact that the 24-line T-1 digital loop carriers used in the Hatfield Model are spaced at 36 kilofoot intervals, and are supplied with commercial power. This would result in a maximum copper line distance of 18 kilofeet with resistance of 934 ohms from the powering T-1 DLC source to the farthest repeater from that source.[24]

GTE also claims that the Hatfield Model leaves out several pieces of equipment necessary for provisioning DLCs. First, they claim the model incorrectly excludes the use of controlled environmental vaults (CEVs) for DLCs.[25] The Hatfield Model excludes CEVs because they are not necessary for modern DLC electronic equipment. Use of air-conditioned CEVs was necessary only for early fiber optic multiplexers, the lasers in which presented a problem of heat dissipation

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[24] Powering of T-1 repeaters from both directions is common in interoffice design, and has been adopted by the Hatfield modelers.

[25] See Comments of GTE at 13.

and burn-out. As laser technology has developed, air conditioning is no longer necessary to protect the lasers from overheating. In fact, DLCs are routinely installed today without the use of CEVs, and so there is no need to include a CEV in the model.

Second, GTE claims that neither the Hatfield Model nor the BCPM uses small (12 to 96 line) fiber-fed DLCs.[26] In fact, the Hatfield Model does use small DLCs, of an initial potential capacity of up to 96 lines. However, it equips these DLCs only with the number of line cards needed to meet the expected demand. Due to the efficiencies and expandability of such an arrangement, the small DLCs installed in the Hatfield Model represent the most economically efficient use of DLCs, when computed on a life-cycle cost basis.[27]

Third, GTE claims that the demultiplexing arrangement used on the Hatfield Model's integrated DLC (IDLC) loops is not yet commercially available, nor has the industry reached consensus on how it should be implemented.[28] GTE is incorrect. The technology used in the Hatfield Model is based on Bellcore generic requirements GR-303 for Integrated Digital Loop Carrier. It is commercially available, it is the forward-looking technology, and it is the technology all LECs are currently deploying on a forward-looking basis.

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26 Ibid.

27 In addition to the use of these small fiber-fed DLCs, copper T-1 fed 24-line DLCs are also used as a cost effective measure on long loops.

28 See Comments of GTE at 13-14.

Finally, GTE states that hand-off at the DS-0 level, as required in some interconnection arrangements, may require the use of some universal DLC (UDLC) in IDLC central office terminals. According to GTE, the Hatfield Model inappropriately excludes the common and per-channel costs associated with this combined IDLC/UDLC configuration. The Commission has already found that it is technically feasible to unbundle IDLC-delivered loops.[29] Thus, there is no need to have combined IDLC/UDLC configurations, as GTE avers.

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29 See Implementation of the Local Competition Provisions of the Telecommunications Act of 1996, CC Docket No. 96-98, First Report and Order, 11 FCC Rcd 15499, 15692 (para. 384)(1996).

VIII. CONCLUSION

For the reasons stated herein, the Commission should adopt the Hatfield Model's approach to determining outside plant placement.

Respectfully submitted,

AT&T CORP.

Mark C. Rosenblum
Peter H. Jacoby
Room 3245111
295 North Maple Avenue
Basking Ridge, New Jersey 07920
(908) 221-2631

David L. Lawson
Scott M. Bohannon
1722 I Street N.W.
Washington, D.C. 20006
(202) 736-8034

Attorneys for A&T Corp.

MCI Telecommunications Corporation

Chris Frentrup
Senior Economist
1801 Pennsylvania Avenue, N.W.
Washington, D.C. 20006
(202) 887-2731

October 3, 1997

STATEMENT OF VERIFICATION

I have read the foregoing and, to the best of my knowledge, information, and belief, there is good ground to support it, and it is not interposed for delay. I verify under penalty of perjury that the foregoing is true and correct. Executed on October 3, 1997.

Chris Frentrup
1801 Pennsylvania Avenue, NW
Washington, DC 20006
(202 887-2731

ATTACHMENT A

Business Plus

DAILY CAMERA Monday, September 29, 1997 SECTION

MARTY CAIVANO / Daily Camera

Steve Young, construction manager at Rugby Row Condominiums, 3663 Iris Ave. in Boulder, shows exposed phone wires slithering through the condo development spearheaded by his brother, Mark Young.

Telephone troubles

■ With its service record, can US West compete?

By TOM LOCKE
Camera Business Writer

Competition is gradually making its way into local phone service in Boulder County. Is US West ready?

Not according to Mark Young. He's about halfway through developing 12 new condominiums at 3663 Iris Ave. in Boulder, and his project is served by tangles of phone wires that are lying on the ground, tied to a fence and wrapped around trees.

He has been battling for 2½ years with US West to resolve the problem, which arose when representatives from US West failed to show up to join other utilities in laying their lines through a common ditch. The ditch eventually had to be covered, and US West has refused to uncover it to bury its phone lines. So lines snake through the development and get cut about once a week by construction equipment, Young says.

It's not a typical US West installation, but Young believes his problems are indicative of something fundamentally awry with the telephone giant, something that may prove damaging as it tries to respond to new competition.

"The bureaucracy that I've had to

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deal with there suggests that they'll be slow to respond," says Young. If a competitor comes along that will provide alternative service, he says he'll switch, even if it costs more for service.

"I would go with a competitor right now because of the way I've been treated there," he says.

A recently released consumer assistance summary by the Colorado Public Utilities Commission shows that the Englewood-based telephone company has improved its service in Colorado over the last several years, dramatically in some instances. But the numbers also show that U S West continues to have a significant problem with customer service.

And Boulder County has more than its fair share of the problem. "Held-orders" — orders for new phone service not provided when the customer requested it — are one measure of customer service, and Boulder County had a per capita held-order rate for the fiscal year ending June 30 that was nearly twice the rate for the state as a whole.

Dian Callaghan, administrative director of the Office of Consumer Counsel, the state consumer advocacy agency, said Boulder County had 91 of of the state's 765 held-orders for new service last fiscal year. That's about 12 percent of the state's held-orders, while Boulder County's population of 256,000 is 6.5 percent of the state's population.

Numbers prepared for the Daily Camera by the PUC show that, for the fiscal year ending June 30, consumer contacts with the PUC were more than 10 times higher for U S West than for electric and natural gas provider Public Service Company of Colorado (see chart). Contacts for U S West totaled 361 in the county, compared with 29 for Public Service, and a city-by-city breakdown shows the large difference to be uniform across all cities.

In addition, only 16 percent of contacts concerning U S West were attributed to informational requests, as opposed to objections about rates or services. Of the Public Service total, 52 percent of the contacts in Boulder County were informational.

U S West spokesman David Beigie emphasizes that the telecommunications industry is a fast-changing arena, so a comparison with Public Service may not be justified. U S West has to keep up with demand for second or third lines, new features, data transfer and other complexities that make comparisons with other utilities difficult, he says.

In addition, U S West has 2.3 million access lines in Colorado, he says, and total customer objections to rates and services "are a very small percentage of our customer base." For fiscal 1997, statewide objections totaled 2,448, or about 0.1 percent of total customers.

That may seem small, unless you're one of the people falling in that percentage.

Take Marcia Greiner, president of Lafayette-based Our Kids Ltd., a maker of sidewalk chalk and other creative playthings for kids.

On April 4, she was told by a U S West representative that the phones at her new 28,000-square-foot Lafayette building at 1400 Overlook Drive were ready. An April Fool's Day notification would have been more appropriate, because when she moved her business she found that the phone lines weren't installed.

On hold

When she tried to find out what happened she: was put on hold for 25 minutes at a time; was continually shuffled around without getting her concerns met, questions answered, or calls returned; and finally was able to get service only after complaining to the PUC.

She figures her out-of-pocket damages for the lack of phone service — including extra rent at her old spot, cellular phone use, and driving — at $5,000 to $7,000. If a competitive service were available to her, she says, she would switch "in a heartbeat, with gleeful joy."

But U S West can point to some significant improvement in certain areas of measuring service quality. One is the column of the new PUC summary that displays service complaints that are "not in compliance" with state regulations. Those "not in compliance" complaints dropped by more than three-quarters between fiscal year 1996 and fiscal year 1997, from 1,714 to 454 (see chart).

And U S West spokesman Beigie points to the company's decline in held-service orders. Those numbers declined by 50 percent between the end of calendar 1995 and the end of calendar 1996, he says, and the company will post further improvement in 1997. He says they show that "our service has improved significantly over last year, and even more so over the past few years."

Bruce Smith, director of the PUC, also emphasizes US West progress over time. "Over the last eight months to a year, we've seen some improvements," he says.

After re-engineering efforts cutting thousands of jobs were instituted in 1994, U S West's service quality problems accelerated. Eventually the problems led to a "show-cause" order, the initial stage of an investigation, and the investigation led to U S West's paying $5.3 million in reparations because of poor service quality. The 1995 payments went to grants for health, medical, telecommunications and education projects.

Last fall, the PUC began a similar process by sending US West a show-cause letter spurred by poor service quality. But after the company presented evidence of improvement in service, the PUC decided in the spring not to follow with a show-cause order. The PUC's Smith stresses that move as evidence the PUC has become more satisfied with U S West's improvement in complying with service quality rules.

But does compliance with rules tell the most accurate story? Not according to Consumer Counsel's Callaghan. From the consumer's point of view, the more appropriate category to measure is "objections to rates or services," she says, because it "really says how satisfied consumers are with services they are receiving."

In that area, U S West is clearly suffering (see chart). The 2,448 Colorado objections to US West rates or service for fiscal 1997 were down by only 27, or 1.1 percent, from fiscal 1996. And the latest numbers show that total objections are six times higher than the objections recorded five years earlier, in fiscal 1992.

U S West's Beigie says the latest numbers may have been boosted by people objecting to U S West's failed request for a rate rebalancing that included a $3 monthly increase in residential service.

But Callaghan points out that contacts concerning rate filings or rates totaled only 47, or 2 percent of the 2,448 contacts. In comparison, 49 percent of all objections recorded against U S West were for either held orders, which totaled 765, or repair complaints, which totaled 434.

"U S West's service is improving, but it still needs a lot of work, especially in the area of repair and held-orders," says Callaghan. There has been "some improvement in both held-service and repairs, but the number of complaints is still way too high."

Some of those complaints came from Kevin Wenzel, director of network operations for Louisville-based Internet service provider privatel LLC. "It's pretty much where you have to complain to the PUC to get it installed on time," he says.

His company put in an order for a high-speed, high-capacity "T-1" line to connect to the Internet backbone in July of last year. Installation was to be in September, and by Novem-

Boulder County

Boulder County consumer contacts with the Colorado Public Utilities Commission concerning U S West and Public Service Co.

Fiscal year ending June 30, 1997

	U S West	Public Service
Boulder	185	22
Longmont	67	4
Louisville/Superior	39	1
Lafayette	19	2
Lyons/Nederland	32	0
Niwot	19	0
Total	361	29

Note: Of the above customer contacts, three for US West and four for Public Service are designated as objections to rate filings. Of the total 361 U S West contacts, 58 (16 percent) were information rather than objection calls. Of the total 29 Public Service contacts, 15 (52 percent) were attributed to information rather than objections.

Source: Colorado Public Utilities Commission